Complete Summary

TITLE

Coronary artery disease: bilateral cardiac catheterization rate.

SOURCE(S)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

Brief Abstract

DESCRIPTION

This measure assesses the number of provider-level bilateral cardiac catheterizations per 100 discharges with procedure code of heart catheterization.

Outpatient procedures may result in selection bias for this indicator and should be examined. In addition, as a utilization indicator, the construct validity relies on the actual inappropriate use of procedures in hospitals with high rates, which should be investigated further.

RATIONALE

Right-side coronary catheterization incidental to left-side catheterization has little additional benefit for patients without clinical indications for right-side catheterization. Bilateral catheterization is contraindicated in most patients without proper indications. As such, lower rates represent better quality.

PRIMARY CLINICAL COMPONENT

Coronary artery disease; bilateral cardiac catheterization

DENOMINATOR DESCRIPTION

All heart catheterizations* in any procedure field. Include only coronary artery disease*. Exclude Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium) and MDC 15 (newborns and other neonates).

*Refer to Appendix A of the original measure documentation for details.

NUMERATOR DESCRIPTION

Number of simultaneous right and left heart catheterizations* in any procedure field. Include only coronary artery disease*. Exclude valid indications for right-sided catheterization* in any diagnosis field, Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), and MDC 15 (newborns and other neonates).

*Refer to Appendix A of the original measure documentation for details.

Evidence Supporting the Measure

PRIMARY MEASURE DOMAIN

Process

SECONDARY MEASURE DOMAIN

Not applicable

EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Wide variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Malone ML, Bajwa TK, Battiola RJ, Fortsas M, Aman S, Solomon DJ, Goodwin JS. Variation among cardiologists in the utilization of right heart catheterization at time of coronary angiography. Cathet Cardiovasc Diagn1996 Feb;37(2):125-30.

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

External oversight/State government program
Internal quality improvement
Quality of care research

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

All age groups, excluding newborns and other neonates

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

More than 1.2 million inpatient cardiac catheterizations were performed in the United States in 1998.

EVIDENCE FOR INCIDENCE/PREVALENCE

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

Unspecified

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Patients with coronary artery disease (CAD) discharged from the hospital, who had a heart catheterization (see the "Denominator Inclusions/Exclusions" field)

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR (INDEX) EVENT

Clinical Condition
Diagnostic Evaluation
Institutionalization

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
All heart catheterizations* in any procedure field. Include only coronary artery disease*.

*Refer to Appendix A of the original measure documentation for details.

Exclusions
Exclude Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium) and MDC 15 (newborns and other neonates).

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Number of simultaneous right and left heart catheterizations* in any procedure
field. Include only coronary artery disease*.

*Refer to Appendix A of the original measure documentation for details.

Exclusions
Exclude valid indications for right-sided catheterization* in any diagnosis field,
Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), and
MDC 15 (newborns and other neonates).

*Refer to Appendix A of the original measure documentation for details.

DENOMINATOR TIME WINDOW

Time window is a single point in time

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Administrative data

LEVEL OF DETERMINATION OF QUALITY

Individual Case

OUTCOME TYPE

Unspecified

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a lower score

ALLOWANCE FOR PATIENT FACTORS

Analysis by subgroup (stratification on patient factors)

DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

Observed (raw) rates may be stratified by hospitals, age groups, race/ethnicity categories, sex, and payer categories.

Risk adjustment of the data is recommended using, at minimum, age and sex.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Each potential quality indicator was evaluated against the following six criteria, which were considered essential for determining the reliability and validity of a quality indicator: face validity, precision, minimum bias, construct validity, fosters real quality improvement, and application. The project team searched Medline for articles relating to each of these six areas of evaluation. Additionally, extensive empirical testing of all potential indicators was conducted using the 1995-97 Healthcare Cost and utilization Project (HCUP) State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. Table 2 in the original measure documentation summarizes the results of the literature review and empirical evaluations on the Inpatient Quality Indicators. Refer to the original measure documentation for details.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

Identifying Information

ORIGINAL TITLE

Bilateral cardiac catheterization rate (IQI 25).

MEASURE COLLECTION

[Agency for Healthcare Research and Quality (AHRQ) Quality Indicators](#)

MEASURE SET NAME

[Agency for Healthcare Research and Quality (AHRQ) Inpatient Quality Indicators](#)

DEVELOPER

Agency for Healthcare Research and Quality

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2002 Jun

REVISION DATE

2004 Jul

MEASURE STATUS

Please note: This measure has been updated. The National Quality Measures Clearinghouse is working to update this summary.

SOURCE(S)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jul 21. 172 p.(AHRQ Pub; no. 02-R0204).

MEASURE AVAILABILITY

The individual measure, "Bilateral Cardiac Catheterization Rate (IQI 25)," is published in "AHRQ Quality Indicators. Guide to Inpatient Quality Indicators: Quality of Care in Hospitals -- Volume, Mortality, and Utilization." An update of this document is available in [Portable Document Format (PDF)](#) and a [zipped WordPerfect(R) file](#) from the [Quality Indicators](#) page at the Agency for Healthcare Research and Quality (AHRQ) Web site.

For more information, please contact the QI Support Team at support@qualityindicators.ahrq.gov.

COMPANION DOCUMENTS

The following are available:

- "AHRQ Inpatient Quality Indicators Software (Version 2.1 Revision 3)" (Rockville, [MD]: AHRQ, 2004 Jul 21) and its accompanying documentation can be downloaded from the Agency for Healthcare Research and Quality (AHRQ) Web site. (The software is available in SPSS- and SAS-compatible formats.)
- Guidance for using the AHRQ quality indicators for hospital-level public reporting or payment. Rockville (MD): Agency for Healthcare Research and Quality; 2004 Aug. 24 p. This document is available from the AHRQ Web site.
- "AHRQ Inpatient Quality Indicators - Interpretative Guide" (Irving [TX]: Dallas-Fort Worth Hospital Council Data Initiative; 2002 Aug 1. 9 p.) is available. This guide helps you to understand and interpret the results derived from the application of the Inpatient Quality Indicators software to your own data and is available from the AHRQ Web site.
- "Refinement of the HCUP Quality Indicators" (Rockville [MD]: AHRQ, 2001 May. Various pagings. [Technical review; no. 4]; AHRQ Publication No. 01-0035) is available. This document was prepared by the UCSF-Stanford Evidence-based Practice Center for AHRQ and can be downloaded from the AHRQ Web site.

NQMC STATUS

This NQMC summary was completed by ECRI on December 4, 2002. The information was verified by the Agency for Healthcare Research and Quality on December 26, 2002. This NQMC summary was updated by ECRI on April 7, 2004 and most recently on August 19, 2004. The information was verified by the measure developer on October 13, 2004.

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